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10/663,103

09/16/2003

John D. Reed

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EXAMINER

DEAN, RAYMOND S

ART UNIT

PAPER NUMBER

2618

NOTIFICATION DATE

DELIVERY MODE

06/15/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/663,103

Applicant(s)

REED ET AL.

Examiner

RAYMOND S. DEAN

Art Unit

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-7 and 12-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-7 and 12-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 03/31/2009.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Pages 6 – 7 related to the Sourour reference filed March 31, 2009 with respect to the rejection(s) of claim(s) 1, 12, 16 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found reference Bayley (US 6,775,252)

Bayley, which also teaches a CDMA system, teaches determining, by a mobile station, a communication channel variance condition, wherein the communication channel variance condition is at least one of a primary pilot power variance, fading period and fade depth estimate, or a peak-to-average estimate within an adaptive measurement interval (Cols. 15 lines 55 – 67, 16 lines 1 – 7, pilot power variance).

Examiner respectfully disagrees with Applicants' assertion that Gholmieh does not teach the feature of establishing, by the mobile station, a headroom value based on the communication channel variance condition. Gholmieh, for the same reasons set forth in the Office Actions dated August 22, 2007 and July 16, 2008, teaches this feature. The term "communication channel variance" is a broad term, which reads on a variety of changes to a communication channel such as changes in the quality of the channel or link. It is very well established in the art that closed-loop power control comprises adjusting the power in response to a change in link quality such as a change in the signal-to-interference ratio (SIR). Gholmieh, thus, reads on the limitation in

question. Gholmieh further teaches establishing a headroom value based on the communication channel variance condition. The headroom value changes in response to the power control commands (See Section 0009 of Gholmieh). The power control commands are sent as a result of the change in the channel or link quality thus the headroom value changes ultimately in response to the change in the channel or link quality.

Examiner respectfully disagrees with Applicants' assertion that Examiner acknowledges that Gholmieh does not teach determining, by the mobile station, a communication channel variance condition on Page 4 of the Office Action dated January 2, 2009. Page 4 of the Office Action dated January 2, 2009 actually reads "Gholmieh does not teach determining, by the mobile station, a communication channel variance condition, **wherein the communication channel variance condition is at least one of a primary pilot power variance, fading period and fade depth estimate, or a peak-to-average estimate within an adaptive measurement interval.**"

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3 - 4, 7, 12 - 14, 16 - 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gholmieh et al. (US 2004/0147276) in view of Bayley (US 6,775,252)

Regarding Claim 1, Gholmieh teaches a method for establishing headroom to provide margin in determining available transmit power value for a mobile station operating in a wireless communication system comprising the steps of: establishing, by the mobile station, a headroom value based on the communication channel variance condition (Sections 0009 lines 1 – 9, 0021 lines 3 – 7, 0023, 0026 – 0028).

Gholmieh does not teach determining, by the mobile station, a communication channel variance condition, wherein the communication channel variance condition is at least one of a primary pilot power variance, fading period and fade depth estimate, or a peak-to-average estimate within an adaptive measurement interval.

Bayley, which also teaches a CDMA system, teaches determining, by a mobile station, a communication channel variance condition, wherein the communication channel variance condition is at least one of a primary pilot power variance, fading period and fade depth estimate, or a peak-to-average estimate within an adaptive measurement interval (Cols. 15 lines 55 – 67, 16 lines 1 – 7, pilot power variance).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Gholmieh with the above feature of Bayley for the purpose of decreasing the time required to complete a search of base station signals as taught by Bayley.

Regarding Claim 12, Gholmieh teaches a mobile station comprising: means for establishing, by the mobile station, a headroom value based on the communication channel variance condition (Sections 0009 lines 1 – 9, 0021 lines 3 – 7, 0023, 0026 – 0028).

Gholmieh does not teach means for determining, by the mobile station, a communication channel variance condition, wherein the communication channel variance condition is at least one of a primary pilot power variance, fading period and fade depth estimate, or a peak-to-average estimate within an adaptive measurement interval.

Bayley, which also teaches a CDMA system, teaches determining, by a mobile station, a communication channel variance condition, wherein the communication channel variance condition is at least one of a primary pilot power variance, fading period and fade depth estimate, or a peak-to-average estimate within an adaptive measurement interval (Cols. 15 lines 55 – 67, 16 lines 1 – 7, pilot power variance).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Gholmieh with the above feature of Bayley for the purpose of decreasing the time required to complete a search of base station signals as taught by Bayley.

Regarding Claim 16, Gholmieh teaches a wireless communication system comprising: a base station; at least one mobile station (Figure 1); and means for establishing, by at least one mobile station, a headroom value based on the communication channel variance condition (Sections 0009 lines 1 – 9, 0021 lines 3 – 7, 0023, 0026 – 0028).

Gholmieh does not teach means for determining, by the at least one mobile station, a communication channel variance condition, wherein the communication channel variance condition is at least one of a primary pilot power variance, fading

period and fade depth estimate, or a peak-to-average estimate within an adaptive measurement interval.

Bayley, which also teaches a CDMA system, teaches means for determining, by the at least one mobile station, a communication channel variance condition, wherein the communication channel variance condition is at least one of a primary pilot power variance, fading period and fade depth estimate, or a peak-to-average estimate within an adaptive measurement interval (Cols. 15 lines 55 – 67, 16 lines 1 – 7, pilot power variance).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Gholmieh with the above feature of Bayley for the purpose of decreasing the time required to complete a search of base station signals as taught by Bayley.

Regarding Claims 3, 13, Gholmieh in view of Bayley teaches all of the claimed limitations recited in Claims 1, 12. Gholmieh further teaches wherein the mobile station determines a maximum data rate based on the headroom value (Sections 0010, 0036) and sends the maximum data rate to a base station (Sections 0010, 0036).

Regarding Claims 4, 14, Gholmieh in view of Bayley teaches all of the claimed limitations recited in Claims 1, 12. Gholmieh further teaches wherein the mobile station determines a maximum data rate based on the headroom value (Sections 0010, 0036) and sends a rate adjustment request to a base station (Section 0010).

Regarding Claim 7, Gholmieh in view of Bayley teaches all of the claimed limitations recited in Claim 1. Bayley further teaches wherein determining a

communication channel variance condition includes measuring a variance in a primary pilot power (Cols. 15 lines 55 – 67, 16 lines 1 – 7).

Regarding Claim 17, Gholmieh in view of Bayley teaches all of the claimed limitations recited in Claim 16. Gholmieh further teaches means for determining a data rate based on the headroom value (Sections 0010, 0036).

Regarding Claim 18, Gholmieh in view of Bayley teaches all of the claimed limitations recited in Claim 17. Gholmieh further teaches means for sending the data rate between the base station and said at least one mobile station (Figure 1, Sections 0010, 0036).

4. Claims 5 – 6, 15, 19 – 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gholmieh et al. (US 2004/0147276) in view of in view of Bayley (US 6,775,252), as applied to Claims 1, 12, 16 above, and further in view of Corazza (US 6,563,810).

Regarding Claims 5, 15, 19, Gholmieh in view of Bayley teaches all of the claimed limitations recited in Claims 1, 12, 16. Gholmieh in view of Bayley does not teach detecting a battery condition of the mobile station; and modifying the headroom value based on the battery condition.

Corazza teaches detecting a battery condition of the mobile station; and modifying the headroom value based on the battery condition (Col. 6 lines 30 – 51, the headroom value, R sub Step2, is dependent on the maximum transmit power, which is

dependent on the amount of battery energy, the headroom value is thus dependent on said battery energy by virtue of it's dependence on the maximum transmit power).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Gholmieh in view of Bayley with headroom adjustment method of Corazza for the purpose providing an alternative means of determining a maximum data rate.

Regarding Claim 6, Gholmieh in view of Bayley and in further view of Corazza teaches all of the claimed limitations recited in Claim 5. Corazza further teaches determining if the battery condition relates to a low battery level; and if the battery condition relates to a low battery level, increasing the headroom value (Col. 6 lines 30 – 51, the headroom value, $R_{\text{sub Step2}}$, is dependent on the maximum transmit power, which is dependent on the amount of battery energy, the headroom value is thus dependent on said battery energy by virtue of it's dependence on the maximum transmit power).

Regarding Claim 20, Gholmieh in view of Bayley and in further view of Corazza teaches all of the claimed limitations recited in Claim 19. Gholmieh further teaches means for determining a data rate based on the headroom value (Sections 0010, 0036); and means for sending the data rate between the base station and said at least one mobile station (Figure 1, Sections 0010, 0036).

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAYMOND S. DEAN whose telephone number is (571)272-7877. The examiner can normally be reached on Monday-Friday 6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Raymond S Dean/
Examiner, Art Unit 2618
Raymond S. Dean
June 8, 2009